

## CLAIMS

- 1 1. A method of improving a design of an electronic circuit, comprising:  
2 generating an electronic design;  
3 specifying one or more pipeline locations of the electronic design;  
4 modifying the one or more pipeline locations of the design; and  
5 communicating a result of modifying to a user.
- 1 2. The method of claim 1, further comprising:  
2 specifying rules for pipelining.
- 1 3. The method of claim 2, further comprising:  
2 organizing signals in one or more pipeline locations into signal groups.
- 1 4. The method of claim 1, further comprising:  
2 specifying a minimum number and a maximum number of clocked elements for the one  
3 or more pipeline locations;  
4 specifying an insertion cost for the one or more pipeline locations;  
5 specifying a clocked element; and  
6 specifying a clock.
- 1 5. The method of claim 1, wherein modifying the one or more pipeline locations comprises:  
2 automatically changing a number of clocked elements in the one or more pipeline  
3 locations of the design.

- 1 6. The method of claim 5, wherein automatically changing comprises:  
2 determining if changing the number of clocked elements increases a parameter of the  
3 design.
- 1 7. The method of claim 5, wherein automatically changing comprises:  
2 determining one or more placement locations for one or more clocked elements.
- 1 8. The method of claim 1, further comprising:  
2 modifying a placement tool.
- 1 9. The method of claim 8, wherein modifying the placement tool comprises:  
2 converting timing parameters into length parameters.
- 1 10. The method of claim 1, wherein communicating the result comprises:  
2 replacing a master design with the modified design.
- 1 11. The method of claim 1, wherein communicating the result comprises:  
2 assigning values to placeholders for the inserted clocked elements.
- 1 12. An apparatus for improving a design of an electronic circuit comprising:  
2 means for generating an electronic design;  
3 means for specifying one or more pipeline locations of the electronic design;  
4 means for modifying the one or more pipeline locations of the design; and  
5 means for communicating a result of modifying to a user.

1 13. The apparatus of claim 12, further comprising:

2 means for specifying rules for pipelining.

1 14. The apparatus of claim 13, further comprising:

2 means for organizing signals in one or more pipeline locations into signal groups.

1 15. The apparatus of claim 12, further comprising:

2 means for specifying a minimum number and a maximum number of clocked elements

3 for the one or more pipeline locations;

4 means for specifying an insertion cost for the one or more pipeline locations;

5 means for specifying a clocked element; and

6 means for specifying a clock.

1 16. The apparatus of claim 12, wherein said means for modifying the one or more pipeline

2 locations comprises:

3 means for automatically changing a number of clocked elements in the one or more

4 pipeline locations of the design.

1 17. The apparatus of claim 16, wherein said means for automatically changing comprises:

2 means for determining if changing the number of clocked elements increases a parameter

3 of the design.

1 18. The apparatus of claim 16, wherein said means for automatically changing comprises:

2 means for determining one or more placement locations for one or more clocked

3 elements.

1 19. The apparatus of claim 12, further comprising:

2 means for modifying a placement tool.

1 20. The apparatus of claim 19, wherein said means for modifying the placement tool

2 comprises:

3 means for converting timing parameters into length parameters.

1 21. The apparatus of claim 12, wherein said means for communicating the result comprises:

2 means for replacing a master design with the modified design.

1 22. The apparatus of claim 12, wherein said means for communicating the result comprises:

2 means for assigning values to placeholders for the inserted clocked elements.

1 23. An article of manufacture comprising a computer readable medium storing a computer

2 software program which, when executed by a computer processing system, causes the system to

3 perform a method of improving a design of an electronic circuit, the method comprising:

4 generating an electronic design;

5 specifying one or more pipeline locations of the electronic design;

6 modifying the one or more pipeline locations of the design; and

7 communicating a result of modifying to a user.

1 24. The article of manufacture of claim 23, wherein the program, when executed, causes the

2 system to perform the method further comprising:

3 specifying rules for pipelining.

1 25. The article of manufacture of claim 24, wherein the program, when executed, causes the  
2 system to perform the method further comprising:  
3 organizing signals in one or more pipeline locations into signal groups.

1 26. The article of manufacture of claim 23, wherein the program, when executed, causes the  
2 system to perform the method further comprising:  
3 specifying a minimum number and a maximum number of clocked elements for the one  
4 or more pipeline locations;  
5 specifying an insertion cost for the one or more pipeline locations;  
6 specifying a clocked element; and  
7 specifying a clock.

1 27. The article of manufacture of claim 23, wherein the program, when executed, causes the  
2 system to perform the method further comprising:  
3 modifying the one or more pipeline locations by automatically changing a number of  
4 clocked elements in the one or more pipeline locations of the design.

1 28. The article of manufacture of claim 27, wherein the program, when executed, causes the  
2 system to perform said automatically changing, wherein said automatically changing comprises:  
3 determining if changing the number of clocked elements increases a parameter of the  
4 design.

1 29. The article of manufacture of claim 27, wherein the program, when executed, causes the  
2 system to perform said automatically changing, wherein said automatically changing comprises:

3 determining one or more placement locations for one or more clocked elements.

1 30. The article of manufacture of claim 23, wherein the program, when executed, causes the  
2 system to perform the method further comprising:

3 modifying a placement tool.

1 31. The article of manufacture of claim 30, wherein the program, when executed, causes the  
2 system to perform said modifying the placement tool, wherein said modifying the placement tool  
3 comprises:

4 converting timing parameters into length parameters.

1 32. The article of manufacture of claim 23, wherein the program, when executed, causes the  
2 system to perform said communicating the result, wherein said communicating the result  
3 comprises:

4 replacing a master design with the modified design.

1 33. The article of manufacture of claim 23, wherein the program, when executed, causes the  
2 system to perform said communicating the result, wherein said communicating the result  
3 comprises:

4 assigning values to placeholders for the inserted clocked elements.